

**System and Method for Encrypting
Data Using a Plurality of Processors**

ABSTRACT

A system and method are provided to dedicate one or
5 more processors in a multiprocessing system to performing
encryption functions. When the system initializes, one of
the synergistic processing unit (SPU) processors is
configured to run in a secure mode wherein the local memory
included with the dedicated SPU is not shared with the
10 other processors. One or more encryption keys are stored
in the local memory during initialization. During
initialization, the SPUs receive nonvolatile data, such as
the encryption keys, from nonvolatile register space. This
information is made available to the SPU during
15 initialization before the SPUs local storage might be
mapped to a common memory map. In one embodiment, the
mapping is performed by another processing unit (PU) that
maps the shared SPUs' local storage to a common memory map.